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ON EUCONULUS FULVUS AND E. TROCHIFORMIS.

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Helix fulva as described by Müller (1774) was a composite of two species: (1) adult *Helix fulva* of Draparnaud and later authors, and (2) immature *Helix bidentata* Gmelin. Müller's idea exactly reversed the age-relations of the two forms; he considered (1) to be the young stage of (2), and while he described both forms satisfactorily, and gives the measurements of both, a fuller description is naturally given of the form he considered adult. The somewhat unusual conic shape, etc., rendered it easy for subsequent authors to recognize both forms from Müller's description. Indeed it would be hardly possible to mistake any other snail of the region for either.

The next notice of the forms was by Gmelin (1791), who admits Müller's *H. fulva* without recognizing its composite nature, his account being merely compiled from Müller. Gmelin moreover described and named the adult stage of *Helix bidentata*, referring to unmistakable figures in the *Conchylien Cabinet* of Chemnitz. There has never been any controversy about the validity of Gmelin's *H. bidentata*.

Ten years later (1801), Draparnaud, in his *Tableau des Moll. terr. et fluv. de la France*, p. 72, restricts *Helix fulva* to the *Euconulus*, giving an excellent description. He also recognized and described *H. bidentata*, the two being quite rightly placed in different groups. Up to the present time this arrangement has been followed almost universally.

Two years later, in 1803, Montagu described and figured *Helix trochiformis* (*Testacea Britannica*, p. 427). The account agrees well with our *Euconulus fulvus* except in the number of whorls, Montagu giving it six, which is one more than *E. fulvus* usually has. Montagu did not recognize Müller's snail in his new species. His knowledge of the work of continental authors seems to have been extremely restricted.

So far as I know, the name *trochiformis* has been adopted only by Beck, in his catalogue of 1837, and by Dall, 1905.¹ No description of the snail under Montagu's name has been published since the original one in 1803.

So much for the evidence from original documents. I am acutely aware that on any question of nomenclature there may be from two to a dozen opinions, each supported by arguments which to some will appear conclusive, yet in a case like this, where the conchologists of a century have been practically of one mind, a reversal of their judgment should not be made without full consideration of all aspects of the question. It might reasonably be argued that Müller's description, covering the adult stage of one species (*fulva* auct.) and the immature stage of another (*bidentata* Gmel.), should be restricted to the former, even though Müller himself mistook the real relations of the forms. It is hardly necessary to discuss the inexpediency of discarding all composite species, since everybody admits that either with species or genera some member of the original *melange* must conserve the original name unless all be synonymous with earlier names. It seems to me that the case may be summarized thus:

1774. Müller described as *H. fulva* a composite of two species (*Hygromia bidentata* plus *Euconulus fulvus* of modern authors).

1791. Gmelin eliminated *H. bidentata* from the composite by his unmistakable diagnosis and reference.

1801. Draparnaud recognized the composite nature of Müller's *H. fulva* and restricted that name to the *Euconulus*, which he well described and later figured.

I venture to submit the opinion that no action by Montagu or any other subsequent author should affect the status of either of the two species in question. *Euconulus fulvus* therefore should stand.

¹ Land and Fresh Water Mollusks of Alaska and adjoining regions, Harriman Alaska Expedition, Vol. xiii, p. 40.